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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/554,629	10/11/2000	Shinji Nakahara	00336/LH	6434
7590 06/23/2004 Frishauf Holtz Goodman Langer & Chick 767 Third Avenue 25th Floor New York, NY 10017-2023			EXAMINER KACKAR, RAM N	
			ART UNIT	PAPER NUMBER
			1763	
DATE MAILED: 06/23/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/554,629

Applicant(s)

NAKAHARA ET AL.

Examiner

Ram N Kackar

Art Unit

1763

eo

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 9-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2 Claims 1, 3, 4, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai Susumu et al (JP 9-13172) in view of Tarzwell (US 5982187) and further in view of Somekh et al (US 5643366)

Arai discloses a CVD apparatus with a wafer supporting mechanism containing four lift pins placed equiangularly (Fig 2) along a circumference of a concentric circle and having resilient means for each lift pin (Fig 1-45) and heating means (Fig 9-54 and Para 0008).

Arai does not disclose the resilient mechanism to be made from quartz.

Tarzwell discloses a resilient spring cut from a quartz tube (Col 5 lines 51-63 and Col 6 lines 11-15).

There fore it would have been obvious to one having ordinary skill in the art at the time invention was made to use a resilient support of quartz for its excellent and stable operation at high temperature in order to reduce possibility of crystal defect due to slip.

Arai or Tarzwell do not disclose a plurality of concentric circles containing supporting positions.

Art Unit: 1763

Somekh et al disclose a substrate support with supporting positions on plurality of concentric circles (Fig 9 and Col 9 lines 38- 49).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to provide a plurality of support pins for a substrate of a larger size in order to reduce the slip caused due to gravity when heated at higher temperature.

3 Claim 2, 9, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai Susumu et al (JP 9-13172) in view of Tarzwell (US 5982187) and Somekh et al (US 5643366) as applied to claim 1, 3, 4, 10 and 12 and further in view of Shin Taira et al (JP 08181083).

Arai as modified by the teaching of Somekh et al discloses a CVD apparatus with a wafer supporting mechanism containing lift pins in groups of four lift pins placed equiangularly (Fig 2) along a circumference and having resilient means for each lift pin (Fig 1-45).

Arai does not explicitly disclose the support in a certain orientation.

Shin Taira et al disclose a thermal processing apparatus and lift pin support according to <110> direction with respect to plane 100 of the wafer (Fig a-11).

There fore it would have been obvious to one having ordinary skill in the art at the time invention was made to orient the support pins for <110> direction so as to reduce the problem of slip.

### ***Response to Amendment***

Applicant's arguments filed 5/24/2004 have been fully considered but they are not persuasive.

Art Unit: 1763

Applicant argues that the amended claims are allowable since they do not disclose a plurality of concentric circles containing supporting pins.

Examiner's position in these regards is that the position of supporting pins, four to a concentric circle equiangularly is disclosed by the teachings of Shin Taira. Further, it would have been obvious to have additional support pin circles in the case of substrates of larger diameter in order to prevent sag and resulting slip at higher temperature.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5718574 to Shimazu and US 6576064 to Griffiths et al disclose supporting pins in concentric circles closer to center as well as away from center.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1763

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK

*P. Hassanzadeh  
primary Examiner  
AU 1763*